

11/10/03

Please type a plus sign (+) inside this box → ☐

Based on PTO/SB/08 a & b (05-03)
Approved for use through 05/31/2003. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO				Application Number	10/040,963
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Filing Date	1/5/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	V. Seik
Sheet	1	of	1	Attorney Docket Number	SPLX.P0023

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document Number	Kind Code (if known)	Date of Publication MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
VS	1.	2002/0182844	A1	12-05-2002	Igarashi et al.	
	2.	2003/0053399	A1	01-02-2003	Igarashi et al.	
	3.	5,663,891		09-02-1997	Bamji et al.	
	4.	5,757,089		05-26-1998	Ishizuka	
	5.	5,889,677		03-30-1999	Yasuda et al.	
	6.	6,128,767		10-03-2000	Chapman	
	7.	6,226,560	B1	05-01-2001	Hama et al.	
	8.	6,519,751	B2	02-11-2003	Sriram et al.	
VS	9.	6,543,043	B1	04-01-2003	Wang et al.	

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume/issue number(s), publisher, city and/or country where published.		
VS	10.	Hu, J. et al., A Timing-Constrained Algorithm for Simultaneous Global Routing of Multiple Nets, IEEE/ACM International Conference on Computer Aided Design. ICCAD - 2000. IEEE/ACM Digest of Technical Papers (CAT. NO.00CH37140), Proceedings of International Conference on Computer Aided Design (ICCAD), San Jose, CA, USA, 5-9 Nov. 2000, pp.99-103.		
VS	11.	Kastner, R. et al, Predictable Routing, IEEE/ACM International Conference on Computer Aided Design. ICCAD - 2000. IEEE/ACM Digest of Technical Papers (CAT. NO.00CH37140), Proceedings of International Conference on Computer Aided Design (ICCAD), San Jose, CA, USA, 5-9 Nov. 2000. pp. 110-113.		

Examiner Signature	VUTHE SIEK	Date Considered	4/19/2004
--------------------	------------	-----------------	-----------

* EXAMINER. Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 801.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

11/05/03

Please type a plus sign (+) inside this box → ☐

Based on PTO/SBA/H a & b (05-03)
Approved for use through 05/31/2003. CMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	10/040.963
				Filing Date	1/5/02
				First Named Inventor	Steven Telg
				Group Art Unit	2825
				Examiner Name	V. Seik
Sheet	1	of	6	Attorney Docket Number	SPLX.P0023

U.S. PATENT DOCUMENTS						
Examiner* Initials	Cite No.	U.S. Patent Document		Date of Publication MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code (if known)			
VS	1.	2001/0009 031	A1	07-19-2001	Nitta et al.	
	2.	4,593,363		06-03-1986	Burstein et al.	
	3.	5,267,176		11-30-1993	Antreich et al.	
	4.	5,618,744		04-08-1997	Suzuki et al.	
	5.	5,566,078		10-15-1996	Ding et al.	
	6.	5,587,923		12-24-1996	Wang	
	7.	5,635,736		06-03-1997	Funaki et al.	
	8.	5,637,920		06-10-1997	Loo	
	9.	5,640,327		06-17-1997	Ting	
	10.	5,784,289		07-28-1998	Wang	
	11.	5,798,936		08-25-1998	Cheng	
	12.	5,838,583		11-1998	Varadarajan et al.	
	13.	5,980,093		11-09-1999	Jones et al.	
	14.	6,150,193		11-21-2000	Glenn	
	15.	6,209,123	B1	03-27-2001	Maziasz et al.	
	16.	6,219,832	B1	04-17-2001	Buzbee	
	17.	6,249,902	B1	06-19-2001	Igusa et al.	
	18.	6,253,363	B1	06-26-2001	Gasanov et al.	
	19.	6,295,634	B1	09-25-2001	Matsumoto	
VS	20.	6,307,256		10-23-2001	Chiang et al.	
	21.	6,316,838	B1	11-13-2001	Ozawa et al.	

Examiner Signature	VUTHE SIEK	Date Considered	4/19/2004
-----------------------	------------	--------------------	-----------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Please type a plus sign (+) inside this box → ☐

Based on PTO/SB/09 & 10 (05-03)
Approved for use through 05/31/2003. OMB 0551-C031
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	10/040,963
				Filing Date	1/5/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	V. Siek
Sheet	2	of	6	Attorney Docket Number	SPLX.P0023

U.S. PATENT DOCUMENTS						
VS	22.	6,324,675	B1	11-27-2001	Dutta et al.	
	23.	6,327,693	B1	12-04-2001	Cheng et al.	
	24.	6,330,707		12-11-2001	Shinomiya et al.	
	25.	6,407,434	B1	06-18-2002	Rostoker et al.	
	26.	6,415,422	B1	07-02-2002	Mehrotra et al.	
	27.	6,442,743	B1	08-27-2002	Sarrafzadeh et al.	
	28.	6,448,591	B1	09-10-2002	Juengling	
	29.	6,473,891	B1	10-29-2002	Shively	
	30.	6,480,991	B1	11-12-2002	Cho et al.	
	31.	6,490,713	B2	12-03-2002	Matsumoto	
	32.	6,546,540	B1	04-08-2003	Igarashi et al.	
	33.	6,557,145	B2	04-29-2003	Boyle et al.	
VS	34.	6,567,967	B2	05-20-2003	Greidinger et al.	

FOREIGN PATENT DOCUMENTS								
Examiner* Initials	Cite No.	Foreign Patent Document			Date of Publication MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T*
		Office ²	Number ⁴	Kind Code (if known) ³				
VS	35.	JP	411296560	A	10-29-1999	Matsumoto et al.	with English translation of Abstract;	
VS	36.	JP	2000-82743		03-21-2000	Igarashi et al.	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓

Examiner Signature	VUTHE SIEK	Date Considered	4/19/2004
--------------------	------------	-----------------	-----------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST 3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Please type a plus sign (+) inside this box → ☐

Based on PTO/SB/00 1 & 2 (05-03)
Approved for use through 05/31/2003. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	10/040,963
				Filing Date	1/5/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	V. Seik
Sheet	3	of	6	Attorney Docket Number	SPLX.P0023

FOREIGN PATENT DOCUMENTS							
VS	37.	JP	H03-173471	07-26-1991	Tawada et al.	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓
	38.	JP	H05-243379	09-21-1993	Masako Kuboto	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓
	39.	JP	H05-102305	04-23-1993	Akihiro Sato	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓
	40.	JP	H07-86407	03-31-1995	Shinpei Miura	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓
VS	41.	JP	H09-162279	06-20-1997	Masaaki Yoshida	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓

Examiner Signature	VUTHE SIER	Date Considered	4/19/2004
--------------------	------------	-----------------	-----------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete. Including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Please type a plus sign (+) inside this box → ☐

Based on PTO/SB/08 a & b (05-03)
Approved for use through 05/31/2003. OMB 0551-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Application Number	10/040,963	
			Filing Date	1/5/02	
			First Named Inventor	Steven Teig	
			Group Art Unit	2825	
			Examiner Name	V. Seik	
Sheet	4	of	6	Attorney Docket Number	SPLX.P0023

NON PATENT LITERATURE DOCUMENTS				
Examiner's Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		
VS	42.	Ahuja, R. et al., Faster Algorithms for the Shortest Path Problem, Journal of the Association for Computing Machinery, vol. 37, No. 2, April 1990, pp. 213-223.		
	43.	Brady, L. et al., Channel Routing on a 60° Grid, extended abstract, pp. 956-931.		
	44.	Brambilla, A. et al., Statistical Method for the Analysis of Interconnects Delay in Submicrometer Layouts, IEEE, 8/2001, pp. 957-966.		
	45.	Carothers, K., A Method of Measuring Nets Routability for MCM's General Area Routing Problems, 1999, pp. 186-192.		
	46.	Chen, H. et al., Physical Planning of On-Chip Interconnect Architectures, 2002, IEEE, International Conference, pp. 30-35.		
	47.	Cheng, K., Steiner Problem in Octilinear Routing Model, a Thesis Submitted for the Degree of Master of Science, National University Singapore, 1995, pp. 1-122.		
	48.	Cheng, K. et al., Manhattan or Non Manhattan? A Study of Alternative VLSI Routing Architectures, pp 47-52, 2000.		
	49.	Chip Model with Wiring Cost Map, August 1983, IBM Technical Disclosure Bulletin, vol. 26, iss. 3A, pp. 929-933.		
	50.	Cong, J. et al., Efficient Heuristics for the Minimum Shortest Path Steiner Arborrescence Problem with Applications to VLSI Physical Design, Cadence Design Systems and UCLA Computer Science Department, pp.88-95.		
	51.	Cong, J. et al., Performance-Driven Multi-Layer General Routing for PCB/MCM Designs, UCLA Computer Science Department, 1998, pp. 356-361.		
	52.	Enbody, R. et al., Near-Optimal n-Layer Channel Routing, 23 rd Design Automation Conference, 1986, pp. 708-714.		
	53.	Fang, S. et al., Constrained Via Minimization with Practical Considerations for Multi-Layer VLSI/PCB Routing Problems, 28 th ACM/IEEE Design Automation Conference, 1991, pp. 60-65.		
VS	54.	Hom, I. et al., Estimation of the Number of Routing Layers and Total Wirelength in a PCB Through Wiring Distribution Analysis, 1996, pp. 1-6.		
	55.	Hong, X. et al., Performance-Driven Steiner Tree Algorithms for Global Routing, 30 th ACM/IEEE Design Automation Conference, 1993, pp. 177-181.		

Examiner Signature	VUTHE SEIK	Date Considered	4/19/2004
--------------------	------------	-----------------	-----------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST 3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 and select option 2.

Please type a plus sign (+) inside this box → ☐

Based on PTO/ST08 a & b (05-03)
Approved for use through 05/31/2003. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	10/040,963
				Filing Date	1/5/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	V. Siek
Sheet	5	of	6	Attorney Docket Number	SPLX.P0023

NON PATENT LITERATURE DOCUMENTS		
✓	56.	Khoo, K. et al., An Efficient Multilayer MCM Router Based on Four-Via Routing, 30 th ACM/IEEE Design Automation Conference, 1993, pp. 590-595.
	57.	Lillis, J. et al., Table-Lookup Methods for Improved Performance-Driven Routing, 1998, pp. 368-373.
	58.	Lipski, W. et al., A Unified Approach to Layout Wirability, Mathematical Systems Theory, 1987, pp. 189-203.
	59.	Lodi, E. et al., A Preliminary Study of a Diagonal Channel-Routing Model, Algorithmica, 1989, pp.585-597.
	60.	Lodi, E. et al., Lecture Notes in Computer Science, A 4d Channel Router for a Two Layer Diagonal Model, pp. 464-476, July 1988.
	61.	Naclerio, N. et al., Via Minimization for Gridless Layouts, 24 th ACM/IEEE Design Automation Conference, 1987, pp. 159-165.
	62.	Nam, G. et al, Satisfiability-Based Layout Revisited: Detailed Routing of Complex FPGAs Via Search-Based Boolean SAT, 1999, pp. 167-175.
	63.	Oh, J. et al., Constructing Lower and Upper Bounded Delay Routing Trees Using Linear Programming, 33 rd Design Automation Conference, 1996.
	64.	Partitioning Logic on to Graph Structure, IBM Technical Disclosure Bulletin, February 1990, vol. 32, iss 9A, pp. 469-475.
	65.	Phillips, N., Channel Routing by Constraint Logic, Department of Computer Science Southern Illinois University, ACM, 1992.
	66.	Takashima, Y. et al, Routability of FPGAs with Extremal Switch-Block Structures, IEICE Trans. Fundamentals, vol. E81-A, No. 5, May 1998, pp. 850-856.
	67.	Thakur, S. et al., Algorithms for a Switch Module Routing Problem, 1994, pp. 265-270.
	68.	Theune, D. et al., HERO: Hierarchical EMC-constrained routing, 11/1992, IEEE pp 468-472.
✓	69.	Tseng, H., Timing and Crosstalk Driven Area Routing, pp. 378-381.

Examiner Signature	VUTHE SIEK	Date Considered	4/19/2004
--------------------	------------	-----------------	-----------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number(optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Please type a plus sign (+) inside this box → ☐

Based on PTO/SB/06 a & b (05-03)
Approved for use through 05/31/2003. OMB 3651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	10/040,963
				Filing Date	1/5/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	V. Seik
Sheet	6	of	6	Attorney Docket Number	SPLX.P0023

NON PATENT LITERATURE DOCUMENTS			
VS	70.	Wang, D., Novel Routing Schemes for IC Layout, Part I: Two-Layer Channel Routing, 28 th ACM/IEEE Automation Conference, 1991, pp. 49-53.	
	71.	Wang, M. et al., Modeling and Minimization of Routing Congestion, Jan. 2000, IEEE proceedings of ASP-DAC, Asia and South Pacific, pp. 185-190.	
	72.	Wood, G. et al., FPGA Routing and Routability Estimation Via Boolean Satisfiability, Department of Electrical and Computer Engineering Carnegie Mellon University, Pittsburgh, PA, pp. 119-125.	
	73.	Zhang, C.X. et al., Floorplan Design Using a Hierarchical Neural Learning Algorithm, IEEE, 6/1991, pp. 2060-2063.	
	74.	Zhou, H. et al., An Optimal Algorithm for River Routing with Crosstalk Constraints, 1996.	
	75.	Zhou, H. et al., Global Routing with Crosstalk Constraints, Department of Computer Sciences, University of Texas, 1998, pp. 374-377.	
VS	76.	Zhou, H. et al., Optimal River Routing with Crosstalk Constraints, ACM Transactions on Design Automation of Electronic Systems, vol. 3, No. 3, July 1998, pp. 496-514.	

Examiner Signature	VUTHE SEIK	Date Considered	4/19/2004
--------------------	------------	-----------------	-----------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

10/27/03

Please type a plus sign (+) inside this box ☐

Based on PTO/59-08 a & b (05-07)
Approved for use through 05/31/2003. CMD 0651-03/11
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/040,963
		Filing Date	1/5/02
		First Named Inventor	Steven Teig
		Group Art Unit	2825
		Examiner Name	Vuthe Siek
Sheet 1 of 1	Attorney Docket Number	SPLX.P0023	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume/issue number(s), publisher, city and/or country where published	T
VS	1.	Kastner R et al.: "Predictable Routing" IEEE/ACM International Conference on Computer Aided Design. ICCAD - 2000. IEEE/ACM Digest of Technical Papers (CAT. NO.00CH37140), Proceedings of International Conference on Computer Aided Design (ICCAD), San Jose, CA, USA, 5-9 Nov. 2000. Pages 110-113.	
VS	2.	Jiang Hu et al.: "A Timing-Constrained algorithm for Simultaneous Global Routing of Multiple Nets" IEEE/ACM International Conference on Computer Aided Design. ICCAD - 2000. IEEE/ACM Digest of Technical Papers (CAT. NO.00CH37140), Proceedings of International Conference on Computer Aided Design (ICCAD), San Jose, CA USA, 5-9 Nov. 2000. Pages 99-103.	

Examiner Signature	VUTHE SIEK	Date Considered	4/19/2004
--------------------	------------	-----------------	-----------

* EXAMINER Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. * Applicant's unique citation designation number (optional). * See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. * Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). * For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. * Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. * Applicant is to place a check mark here if English language translation is attached.
This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

9/26/03

Please type a plus sign (+) inside this box ☐

Based on PTO/SB-08 a & b (05-03)
Approved for use through 05/31/2003 OMB 0651-003
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449/PTO				Application Number	10/040,963
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Filing Date	1/5/02
				First Named Inventor	Steven Teig
				Group Art Unit	
				Examiner Name	
Sheet	1	of	1	Attorney Docket Number	SPLX.P0023

U.S. PATENT DOCUMENTS					
Examiner's Initials	Cite No.	U.S. Patent Document Number	Date of Publication MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Related Application Data
VS	1.	2003/0101428 S/N 10/040,915	01-05-2002	Steven Teig et al.	Previously specified
	2.	2003/0043827 S/N 10/040,953	01-05-2002	Steven Teig et al.	Previously specified
	3.	2003/0023943 S/N 10/040,954	01-05-2002	Steven Teig et al.	Previously specified
	4.	2002/0174412 S/N 10/041,942	01-07-2002	Steven Teig et al.	Previously specified
	5.	2003/0088844 S/N 10/041,957	01-07-2002	Steven Teig et al.	Previously specified
	6.	2002/0199165 S/N 10/046,864	01-13-2002	Steven Teig et al.	Previously specified
	7.	2003/0056187 S/N 10/047,982	01-14-2002	Steven Teig et al.	Previously specified
	8.	2002/0073390 S/N 09/737,210	12-13-2000	Steven Teig et al.	Previously specified
	9.	2002/0124231 S/N 09/739,580	12-15-2000	Steven Teig et al.	Previously specified
	10.	2003/0121015 S/N 09/745,067	12-19-2000	Steven Teig et al.	Previously specified
	11.	2002/0166105 S/N 10/040,948	01-05-2002	Steven Teig et al.	Previously Specified
	12.	2003/0088841 S/N 10/329,241	12-23-2002	Steven Teig et al.	Previously specified
VS	13.	2003/0088845 S/N 10/047,978	01-13-2002	Steven Teig et al.	Continuation of the parent application (2003/0079193) of the present application.

Examiner Signature	VUTHE SEIK	Date Considered	9/19/2004
--------------------	------------	-----------------	-----------

* EXAMINER Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional). See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

9/15/03

Please type a plus sign (+) inside this box ☐

Based on PTO/SB/08 at 2.5 (05-03)
 Approved for use through 05/31/2003. CMB 0651-0031
 U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
 Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of
 information unless it contains a valid OMB control number

Substitute for form 1449A/PTO			Application Number	10/040,963	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>			Filing Date	1/5/02	
			First Named Inventor	Steven Teig	
			Group Art Unit		
			Examiner Name		
Sheet	1	of	1	Attorney Docket Number	SPLX.P0023

U.S. PATENT DOCUMENTS						
Examiner's Initials	Cite No.	U.S. Patent Document		Date of Publication MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Related Application Data
		Number Code (if known)	Kind (if known)			
VS	1.	2003/0079193		12/07/2001	Steven Teig et al.	Parent application; present application is a continuation of 2003/079193
	2.	2003/0018947		12/07/2001	Steven Teig et al.	Application filed on the same day as the parent application 2003/0079193, with the same specification as the present application except for summary and abstract
	3.	2002/0147958		10/19/2001	Steven Teig et al.	Parent application per the preliminary amendment dated 2/19/03
	4.	2003/0063614		01/04/2002	Steven Teig et al.	Application with some of the same parent provisional applications and with the same specification as the present application except for summary and abstract
	5.	2003/0064559		01/04/2002	Steven Teig et al.	Application with some of the same parent provisional applications and with the same specification as the present application except for summary and abstract
	6.	2003/0063568		01/04/2002	Steven Teig et al.	Application with some of the same parent provisional applications and with the same specification as the present application except for summary and abstract
	7.	2003/0101428		01/05/2002	Steven Teig et al.	Continuation of 2003/0079193
	8.	2002/0166105		01/05/2002	Steven Teig et al.	Continuation of 2003/0079193
	9.	2003/0043827		01/05/2002	Steven Teig et al.	Continuation of 2003/0079193
	10.	2003/0023943		01/05/2002	Steven Teig et al.	Continuation of 2003/0079193
	11.	2002/0174412		01/07/2002	Steven Teig et al.	Continuation of 2003/0079193
	12.	2003/0088844		01/07/2002	Steven Teig et al.	Continuation of 2003/0079193
	13.	2002/0199165		01/13/2002	Steven Teig et al.	Continuation of 2003/0079193
	14.	2003/0066043		01/13/2002	Steven Teig et al.	Continuation of 2003/0088844 per preliminary amendment
VS	15.	2003/0115566		01/13/2002	Steven Teig	Continuation of 2003/0088844 per preliminary amendment

Examiner Signature	VUTHE SEIK	Date Considered	4/19/2004
--------------------	------------	-----------------	-----------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 608. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. * Applicant's unique citation designation number (optional). * See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. * Enter Office that issued the document, by the two-letter code (WIPO Standard ST 3). * For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. * Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. * Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments or the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Please type a plus sign (+) inside this box ☐

Based on PTO/SB/08 2 5 b (05-03):
Approved for use through 06/31/2003 OMB 0651-0131
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO			Application Number	10/040,963	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>			Filing Date	1/5/02	
			First Named Inventor	Steven Teig	
			Group Art Unit		
			Examiner Name		
Sheet	2	of	2	Attorney Docket Number	SPLX.P0023

U.S. PATENT DOCUMENTS					
✓	16.	2003/0056187	01/14/2002	Steven Teig et al.	Another continuation of 2003/0079193
	17.	2003/0066044	01/13/2002	Steven Teig et al.	Application with some of the same parent provisional applications and with the same specification as the present application except for summary and abstract
	18.	2003/0066045	01/13/2002	Steven Teig et al.	Application with some of the same parent provisional applications and with the same specification as the present application except for summary and abstract
	19.	2002/0133798	12/06/2000	Steven Teig et al.	Application regarding related placement technology
	20.	2002/0100007	12/06/2200	Steven Teig et al.	Application regarding related placement technology
	21.	2002/0073390	12/13/2000	Steven Teig et al.	Application regarding related placement technology
	22.	S/N 09/737,220	12/13/2000	Steven Teig et al.	Application regarding related placement technology
	23.	S/N 09/737,245	12/13/2000	Steven Teig et al.	Application regarding related placement technology
	24.	S/N 09/739,460	12/15/2000	Steven Teig et al.	Application regarding related placement technology
	25.	2002/0124231	12/15/2000	Steven Teig et al.	Application regarding related placement technology
	26.	S/N 09/739,589	12/15/2000	Steven Teig et al.	Application regarding related placement technology
	27.	S/N 09/742,171	12/19/2000	Steven Teig et al.	Application regarding related placement technology
	28.	2003/0121015	12/19/2000	Steven Teig et al.	Application regarding related placement technology
	29.	2002/0069397	01/13/2002	Steven Teig et al.	Application regarding related placement technology
	30.	2002/0170027	02/20/2002	Steven Teig et al.	Application regarding related placement technology
	31.	2002/0157075	02/20/2002	Steven Teig et al.	Application regarding related placement technology
✓	32.	2003/0088841	12/23/2002	Steven Teig et al.	Application regarding related placement technology

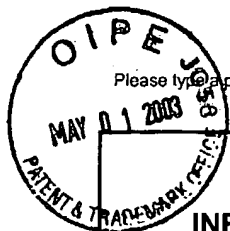
Examiner Signature	VUTHE SEIK	Date Considered	4/19/2004
--------------------	------------	-----------------	-----------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. * Applicant's unique citation designation number (optional). * See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. * Enter Office that issued the document, by the two-letter code (WIPO Standard ST 3). * For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. * Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST 16 if possible. * Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

05/01/03

Please type a plus sign (+) inside this box. ☐
 PTO/SB/08A (08-00) - MODIFIED
 Approved for use through 10/31/2002. OMB 0651-0031
 Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet	1	of	1	Application Number	10/040,963
				Filing Date	1/5/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	Vuthe Siek
				Attorney Docket Number	SPLX.P0023

U.S. PATENT DOCUMENTS

Examiner* Initials	Cite No. ¹	U.S. Patent Document Number	Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
V/S	1.	2001/ 0003843	A1	Scepanovic et al.	06-14-01	
	2.	4,615,011		Linsker	09-30-86	
	3.	4,673,966		Shimoyama	06-16-87	
	4.	4,782,193		Linsker	11-01-88	
	5.	4,855,929		Nakajima	08-08-89	
	6.	5,097,422		Corbin II et al.	03-17-92	
	7.	5,251,147		Finnerty	10-05-93	
	8.	5,281,151		Arima et al.	01-25-94	
	9.	5,360,948		Thornberg	11-01-94	
	10.	5,375,069		Satoh et al.	12-20-94	
	11.	5,532,934		Rostoker	07-02-96	
	12.	5,578,840		Scepanovic	11-26-96	
	13.	5,633,479		Hirano	05-27-97	
	14.	5,634,093		Ashida et al.	05-27-97	
	15.	5,636,125		Rostoker et al.	06-03-97	
	16.	5,650,653		Rostoker et al.	07-22-97	
	17.	5,723,908		Fuchida et al.	03-03-98	
	18.	5,742,086		Rostoker et al.	04-21-98	
	19.	5,757,656		Hershberger et al.	05-26-98	
	20.	5,777,360		Rostoker et al.	07-07-98	
	21.	5,811,863		Rostoker et al.	09-22-98	
	22.	5,822,214		Rostoker et al.	10-13-98	
	23.	5,859,449		Kobayashi et al.	01-12-99	
V/S	24.	5,898,597		Scepanovic et al.	04-27-99	
	25.	5,914,887		Scepanovic et al.	06-22-99	

 RECEIVED
 MAY - 2 2003
 TECHNOLOGY CENTER 2800

Examiner Signature	VUTHE SIEK	Date Considered	4/19/2004
-----------------------	------------	--------------------	-----------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.



Please place a plus sign (+) inside this box



PTO/SB/08A (08-00) - MODIFIED
Approved for use through 10/31/2002. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Application Number	10/040,963		
Filing Date	1/5/02		
First Named Inventor	Steven Teig		
Group Art Unit	2825		
Examiner Name	Vuthe Siek		
Attorney Docket Number	SPLX.P0023		
Sheet	2	of	2

U.S. PATENT DOCUMENTS

VS	26.	5,973,376		Rostoker et al.	10-26-99	
	27.	6,035,108		Kikuchi	03-07-00	
	28.	6,058,254		Scepanovic et al.	05-02-00	
	29.	6,067,409		Scepanovic et al.	05-23-00	
	30.	6,068,662		Scepanovic et al.	05-30-00	
	31.	6,123,736		Pavisic et al.	09-26-00	
	32.	6,134,702		Scepanovic et al.	10-17-00	
	33.	6,155,725		Scepanovic et al.	12-05-00	
	34.	6,175,950	B1	Scepanovic	01-16-01	
	35.	6,216,252	B1	Dangelo et al.	04-10-01	
	36.	6,230,306	B1	Raspopovic et al.	05-08-01	
	37.	6,247,167	B1	Raspopovic et al.	06-12-01	
	38.	6,260,179	B1	Ohsawa et al.	07-10-01	
	39.	6,262,487	B1	Igarashi et al.	07-17-01	
	40.	6,289,495	B1	Raspopovic	09-11-01	
	41.	6,301,686	B1	Kikuchi et al.	10-09-01	
	42.	6,327,694	B1	Kanazawa	12-04-01	
	43.	6,385,758	B1	Kikuchi et al.	05-07-02	
	44.	6,401,234	B1	Alpert et al.	06-04-02	
	45.	6,405,358	B1	Nuber	06-11-02	
	46.	6,412,097	B1	Kikuchi et al.	06-25-02	
	47.	6,412,102	B1	Andreev et al.	06-25-02	
	48.	6,436,804	B2	Igarashi et al.	08-20-02	
	49.	6,446,245	B1	Xing et al.	09-03-02	
	50.	6,463,575	B1	Takahashi	10-08-02	
	51.	6,516,455	B1	Teig et al.	02-04-03	
VS	52.	2003/0025 205	A1	Shively	02-06-03	

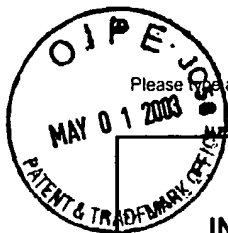
RECEIVED
MAY - 2 2003
TECHNOLOGY CENTER/2800

Examiner Signature	VUTHE SIEK	Date Considered	4/19/2004
-----------------------	------------	--------------------	-----------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.



Please type a plus sign (+) inside this box ☐

PTO/SB/08A (08-00) - MODIFIED
Approved for use through 10/31/2002. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	10/040,963
				Filing Date	1/5/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	Vuthe Siek
Sheet	3	of	3	Attorney Docket Number	SPLX.P0023

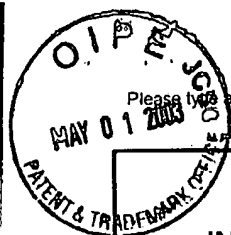
FOREIGN PATENT DOCUMENTS								
Examiner* Initials	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code (if known) ⁵				
VS	53.	JP	64-15947		Ouchi	01-19-89		
VS	54.	JP	04000677		Fujiwara et al.	01-1992		

RECEIVED
MAY - 2 2003
TECHNOLOGY CENTER 2800

Examiner Signature	VUTHE SIEK	Date Considered	4/19/2004
-------------------------------	------------	----------------------------	-----------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.



Please type a plus sign (+) inside this box ☐

PTO/SB/08A (08-00) - MODIFIED
Approved for use through 10/31/2002. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

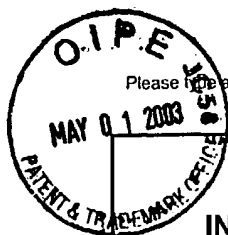
Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	10/040,963
				Filing Date	1/5/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	Vuthe Siek
Sheet	4	of	4	Attorney Docket Number	SPLX.P0023

NON PATENT LITERATURE DOCUMENTS				
Examiner* Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵	
VS	55.	A.H. Farrahi, et al., Quality of EDA CAD Tools: Definitions, Metrics and Directions, Quality Electronic Design, 2000, Proceedings of the first International Symposium on March 2000, pp 395-405.		
	56.	A. Vannelli, et al., An adaptation of the interior point method for solving the global routing problem, 2/1991, IEEE pp 193-203.		
	57.	B. Berger, et al., Nearly Optimal Algorithms and Bounds for Multilayer Channel Routing, Journal of the Association for Computing Machinery, pp. 500-542, March 1995.		
	58.	C. Chiang, et al., Wirability of Knock-Knee Layouts with 45° Wires, IEEE Transactions on Circuits and Systems, Vol. 38, Issue 6, pp 613-624, June 1991.		
	59.	G. Overtone, EDA Underwriter 2 Finding Space in a Multi Layer Board, Electronic Engineering, Morgan-Grampian LTD, vol. 67, No. 819, pp 29-30.		
	60.	G.D. Hachtel et al., Linear Complexity Algorithms for Hierarchical Routing, 1/89, IEEE pp 64-80.		
	61.	J.D. Cho, et al., Four-Bend Top Down Global Routing, IEEE, pp 793-802, 1998.		
	62.	J. Su et al., Post Route Optimization for Improved Yield Using Rubber-Band Wiring Model, 1997 International Conference on Computer-Aided Design, pp 700-706, November 1997.		
	63.	J. Vicente, RSR: A New Rectilinear Steiner Minimum Tree Approximation for FPGA Placement and Global Routing, Proceedings of the 24 th Euro Micro Conference, pp 192-195, August 1998.		
	64.	K. Powers et al., The 60° Grid: Routing Channels in Width d/square root 3, VLSI, 1991, Proceedings., First Great Lakes Symposium on Kalamazoo, MI, USA, pp 214-291, March 1991.		
	65.	M. Alexander et al., Performance-Oriented Placement and Routing for field-programmable gate arrays, Proceedings of the European Design Automation Conference, pp 80-85, 1995.		
	66.	M. Alexander et al., Placement and Routing for Performance-Oriented FPGA Layout, VLSI Design, Vol. 7, No. 1, 1998.		
	67.	M. Igarashi et al., A Diagonal-Interconnect Architecture and Its Application to RISC Core Design, 2002 IEEE Solid-Sate Circuits Conference, pp 210-460, February 2002.		
	68.	P. Dood, et al., A Two-Dimensional Topological Compactor with Octagonal Geometry, 28 th ACM/IEEE Design Automation Conference, pp 727-731, July 1991		
	69.	P. Parakh, et al., Congestion Driven Quadratic Placement, Proceedings of Design Automation Conference, 1998, pp 275-278.		
VS	70.	R. Putatunda et al., VITAL: Fully Automatic Placement Strategies for Very Large Semicustom Designs, Proceedings of the International Conference on Computer Design: VLSI in Computers and Processors, pp 434-439 October 1988.		

Examiner Signature	VUTHE SIEK	Date Considered	4/19/2004
-------------------------------	------------	----------------------------	-----------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.



Please use a plus sign (+) inside this box ☐

PTO/SB/08A (08-00) - MODIFIED
Approved for use through 10/31/2002. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO				Application Number	10/040,963
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Filing Date	1/5/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	Vuthe Siek
Sheet	5	of	5	Attorney Docket Number	SPLX.P0023

NON PATENT LITERATURE DOCUMENTS		
VS	71.	S. Dutt, et al., Probability-Based Approaches to VLSI Circuit Partitioning, IEEE Trans. On Computer Aided Design of IC's and Systems, Vol. 19, No. 5, May 2000, pp 534-549.
	72.	Y. Sekiyama et al., Timing-Oriented Routers for PCB Layout Design of High-Performance Computers, International Conference on Computer Aided Design, pp 332-335, November 1991.
	73.	C. Leiserson et al., Algorithm for Routing and Testing Routability of Planar VLSI Layouts, pp 69-78, May 1985.
	74.	S. Das et al., Channel Routing in Manhattan-Diagonal Model, 9 th International Conference on VLSI Design, January 1996, pp 43-48.
	75.	W. Wei-Ming Dai et al., Routability of a Rubber-Band Sketch. 28 th ACM/IEEE Design Automation Conference, 1991. pp 45-65.
	76.	H. Chen, Routing L-Shaped Channels in Nonslicing-Structure Placement. 24 th ACM/IEEE Design Automation Conference, pp 152-165, 1987.
	77.	I. Tollis, Techniques for Wiring in Non-Square Grids, pp 66-69. May 1989.
	78.	E. Lodi et al., A 2d Channel Router for the Diagonal Model, pp 111-125, April 1991.
	79.	E. Lodi et al., Routing in Times Square Mode, pp 41-48, June 1990.
	80.	K. Cheng-Kok et al., Manhattan or Non Manhattan? A Study of Alternative VLSI Routing Architectures. pp 47-52, 2000
	81.	E. Lodi et al., Routing Multiterminal Nets in a Diagonal Model, pp 899-902, 1988.
	82.	D. Staepelaere et al., Surf: A Rubber-Band Routing System for Multichip Modules. pp 18-26, 1993.
	83.	S. Das et al., Routing of L-Shaped Channels, Switch boxes and Staircases in Manhattan-Diagonal Model, pp 65-70m January 1998.
	84.	W. Schiele et al., A Gridless Router for Industrial Design Rule, 27 th ACM/IEEE Design Automation Conference, pp 626-631, 1990.
VS	85.	J. Nester, A New Look at Hardware Maze Routing, Proceedings of the 12 th ACM Symposium on Great Lakes Symposium on VLSI, pp 142-147, April 2002.

Examiner Signature	VUTHE SIEK	Date Considered	4/19/2004
--------------------	------------	-----------------	-----------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.